UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,712	01/19/2001	Randy K. Young	201009/131	2864

7590 06/28/2005

Gunnar G. Leinberg
NIXON PEABODY LLP
Clinton Square
P.O. Box 31051
Rochester, NY 14603

EXAMINER	
NGUYEN, DUNG X	
ART UNIT	PAPER NUMBER
2638	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/765,712	YOUNG, RANDY K.	
	Examiner	Art Unit	
	Dung X. Nguyen	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *01 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 98* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *56, 57, 59, 60, 66, and 67* is/are allowed.

6)☒ Claim(s) *See Continuation Sheet* is/are rejected.

7)☒ Claim(s) *See Continuation Sheet* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims rejected are 1, 2, 5, 6, 8, 9, 12, 15, 16, 18, 19, 22, 24, 28, 30 - 32, 34 - 36, 38 - 40, 42, 45, 46, 48, 51 - 53, 55, 58, 61 - 65, 68 - 70, 73, 77, 79, 80, 84, 85, 88, 92, and 95.
Continuation of Disposition of Claims: Claims objected to are 3, 4, 7, 10, 11, 13, 14, 17, 20, 21, 23, 37, 41, 43, 44, 47, 49, 50, 54, 71, 72, 74, 75, 76, 78, 81, 83, 86, 87, 89, 90, 91, 93, 94, and 96 - 98.

Response to Arguments

1. Applicant's arguments filed on October 01, 2004 have been fully considered and are persuasive. The rejection(s) of the Office action filed on June 07, 2004 has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Dolby et al. (US patent # Re. 30,468) and Ishibashi (US patent # 6,879,7126 B1).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless –*
>
> *(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

3. **Claims 1, 2, 5, 6, 8, 9, 12, 15, 16, 18, 19, 22, 24, 28, 31, 32, 34, 35, 38, 39, 42, 45, 46, 48, 49, 50 – 53, 55, 58, 61, 63 – 65, 68 – 70, 73, 77, 79, 80, 84, 85, 88, 92, and 95 are rejected** under 35 U.S.C. 102(b) as being anticipated by Dolby et al. (US patent # Re. 30,468).

Regarding claim 1, Dolby et al. discloses (figure 18) a modulator/demodulator system, comprising:

- A transmission system, which applies one of a plurality of time scales and one of a plurality of time delays to one of a pair of substantially matched base signals, combines the time scaled and time delayed base signal with the other one of the pair of base signals to form a doublet (column 5, lines 20 – 29 and column 3, lines 44 – 55), and transmit the doublet (column 2, lines 59 - 63); and
- A receiving system (column 14, lines 22 and 23), which receives the doublet and inherently extracts information form the doublet (column 4, lines 62 – 66) based on one of the plurality of time scales and the one of the plurality of time delays which were applied.

Regarding claim 2, as followed by the limitations analyzed in claim 1, Dolby et al. further discloses (figure 18) wherein the transmission system further comprises:

- A signal generator, which generates the pair of substantially matched base signals;
- An encoding system, which modulates the one of the plurality of time scales and the one of the plurality of time delays onto one of the pair of substantially matched base signals (column 14, lines 57 – 61);
- A combiner, which combines the time scaled and time delayed base signal with the other one of the pair signals to form a doublet; and
- A transmitter, which transmits the doublet (column 2, lines 59 – 63).

Regarding claim 5, as followed by the limitations analyzed in claim 1, Dolby et al. further discloses that wherein the at least one of the pair of matched base signals contains the information and the receiving system inherently extracts the information from the at least one of pair of substantially matched base signals in the doublet (column, 3, lines 45 – 48).

Regarding claim 6, as followed by the limitations analyzed in claim 2, Dolby et al. further discloses that wherein the combiner is an adder.

Regarding claim 8, as followed by the limitations analyzed in claim 1, Dolby et al. further discloses that wherein the information comprises a message embedded by the transmission system (column 4, lines 62 – 66).

Regarding claim 9, as followed by the limitations analyzed in claim 1, Dolby et al. further discloses that wherein the information comprises imaging data embedded by the transmission system (column 9, lines 42 – 46).

Regarding claim 12, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 15, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 16, the limitations are analyzed in the same manner set forth as claim 6.

Regarding claim 18, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 19, the limitations are analyzed in the same manner set forth as claim 9.

Regarding claim 22, Dolby et al. discloses (figure 18) a modulator/demodulator system, comprising:

- A transmission system, which applies one of a plurality of time scales to one of a pair of substantially matched base signals, combines the time scaled with the other one of the pair of base signals to form a doublet (column 5, lines 20 – 29 and column 3, lines 44 – 55), and transmit the doublet (column 2, lines 59 - 63); and
- A receiving system (column 14, lines 22 and 23), which receives the doublet and inherently extracts information form the doublet (column 4, lines 62 – 66) based on one of the plurality of time scales which was applied.

Regarding claim 24, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 2.

Regarding claim 28, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 29, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 9.

Regarding claim 31, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 5.

Regarding claim 32, the limitations are analyzed in the same manner set forth as claim 22.

Regarding claim 34, as followed by the limitations analyzed in claim 32, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 35, as followed by the limitations analyzed in claim 32, the limitations are analyzed in the same manner set forth as claim 9.

Regarding claim 38, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 39, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 9.

Regarding claim 42, Dolby et al. discloses (figure 18) a transmission for transmitting information (column 4, lines 62 - 66), comprising:

- An encoding system, which applies one of a plurality of time scales to one of a pair of substantially matched base signals;
- A combiner, which combines the time scaled base signal with the other one of the pair of base signals to form a doublet; and
- A transmitter, which transmits the doublet with the information.

Regarding claim 45, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 6.

Regarding claim 48, the limitations are analyzed in the same manner set forth as claim 42.

Regarding claim 51, as followed by the limitations analyzed in claim 48; Dolby et al. further discloses (figure 18) the step of applying one of plurality of time delays to the one of the pair of substantially matched base signals.

Regarding claim 52, as followed by the limitations analyzed in claim 22, the limitations are analyzed in the same manner set forth as claim 9.

Regarding claim 53, as followed by the limitations analyzed in claim 42, the limitations are analyzed in the same manner set forth as claim 45.

Regarding claim 55, Dolby et al. discloses (figure 18) a receiver system for receiving transmitted information (column 14, lines 22 and 23), comprising:

- A receiver, which receives a doublet, wherein the doublet comprises a combined pair of substantially matched base signals and wherein one of a plurality of time scales was applied to at least one of the pair of substantially matched base signals; and
- A processing system, which inherently extracts information from the doublet based on the one of the plurality of time scales, which was applied to the doublet prior to transmission.

Regarding claim 58, as followed by the limitations analyzed in claim 55, Dolby et al. further discloses (figure 18) that wherein the processing system also inherently extracts the information from the doublet based on one of a plurality of time delays which was applied to the doublet prior to transmission.

Regarding claim 61, the limitations are analyzed in the same manner set forth as claim 55.

Regarding claim 63, as followed by the limitations analyzed in claim 61, Dolby et al. further discloses (figure 18) that wherein the extraction is also based on one of a plurality of time delays which was applied to the doublet.

Regarding claim 64, as followed by the limitations analyzed in claim 61, the limitations are analyzed in the same manner set forth as the combination of claims 55 and 58.

Regarding claim 65, the limitations are analyzed in the same manner set forth as the combination of claims 55 and 52.

Regarding claim 68, the limitations are analyzed in the same manner set forth as claim 55.

Regarding claim 69, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 70, as followed by the limitations analyzed in claim 69, the limitations are analyzed in the same manner set forth as claim 2.

Regarding claim 73, as followed by the limitations analyzed in claim 69, the limitations are analyzed in the same manner set forth as claim 6.

Regarding claim 77, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 79, as followed by the limitations analyzed in claim 77, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 80, as followed by the limitations analyzed in claim 77, the limitations are analyzed in the same manner set forth as claim 6.

Regarding claim 84, the limitations are analyzed in the same manner set forth as the combination of claims 1 and 9.

Regarding claim 85, as followed by the limitations analyzed in claim 84, the limitations are analyzed in the same manner set forth as the combination of claims 1, 2, and 9.

Regarding claim 88, as followed by the limitations analyzed in claim 8, the limitations are analyzed in the same manner set forth as the combination of claims 1, 2, 6, and 9.

Regarding claim 92, the limitations are analyzed in the same manner set forth as the combination of the combination of claims 84 and 85.

Regarding claim 95, as followed by the limitations analyzed in claim 92, the limitations are analyzed in the same manner set forth as the combination of claims 88.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

5. **Claims 30, 36, 40, and 46 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Dolby et al. US patent # Re. 30,468).

Regarding claim 30, as followed by the limitations analyzed in claim 22, Dolby et al. differs from the instant claimed invention that it does not show the step of wherein the receiving system further comprises a processing system which compares the time scaled signal segments at different ones of the plurality of time scales over time to determine the applied one of the plurality of time scales to extract the in formation from the detection signal.

However, subtracting is just the changing signof adding in the combiner, and it would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognize Dolby et al. as providing the requirement of the claimed invention for compares the time scaled signal segments at different ones of the plurality of time scales over time to determine the applied one of the plurality of time scales to extract the in formation from the detection signal by changing the sign in the combiner from adding to subtracting.

Regarding claim 36, as followed by the limitations analyzed in claim 32, Dolby et al. differs from the instant claimed invention that it does not show the step of wherein the combining step comprises subtracting the time scaled base signal with the other one of the pair of base signals to form the doublet.

However, subtracting is just the changing signed of adding in the combiner, and it would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognize Dolby et al. as providing the requirement of the claimed invention for processing the time scaled signal at different ones of the plurality of time scales over time with the other one of pair of base signals to form the doublet.

Regarding claim 40, as followed by the limitations analyzed in claim 32, the limitations are analyzed in the combination of claims 32 and 36.

Regarding claim 46, as followed by the limitations analyzed in claim 42, the limitations are analyzed in the same manner set forth as claim 36.

6. **Claims 62 rejected** under 35 U.S.C. 103(a) as being unpatentable over Ishibashi (US patent # 6,879,716), in view of Dolby et al. US patent # Re. 30,468).

Regarding claim 62, Ishibashi discloses (figure 2) a receiving method for receiving information, comprising:

- Receiving a doublet (column 1, lines 45 - 58) contained in a composite signal (column 2, line 66); and
- Extracting information from the composite signal based on one of a time scale which was applied to the doublets.

Ishibashi differs from the instant claimed invention that it does not show a plurality of time scales which was applied to each of the doublets.

While Dolby et al. discloses (figure 18) inherently extracting information based on one of a plurality of time scales which was applied to the doublet.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Ishibashi and Dolby et al. as providing the requirement of the claimed invention for enabling carrier components or other repetitive components of signals to be excluded form the compressor or expander action (abstract of Dolby et al.).

Allowable Subject Matter

7. **Claims 3, 4, 7, 10, 11, 13, 14, 17, 20, 21, 23, 25, 27, 33, 37, 41, 43, 44, 47, 49, 50, 54, 71, 72, 74, 75, 76, 78, 81, 82, 83, 86, 87, 89, 90, 91, 93, 94, 96, 97, and 98 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. **Claims 56, 57, 59, and 60 are allowed.** The following is an examiner's statement of reasons for allowance:

Regarding to the claimed invention, the prior art of record fails to show or render obvious of a modulator/demodulator apparatus and its corresponding method for active sensing and navigation. The modulator time-delays and time-scales an arbitrary, noise like "base signal" then it sums this time-scaled and time-delayed version of the base signal with the original base signal to create a doublet. The two signals in the doublet are completely overlapped in time and frequency. This doublet creation process can be repeated and multiple doublets can be summed together and simultaneously transmitted. The demodulator uses the applied differential time-scale and time-delay to extract information from the doublet.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park et al. (US patent # 5,786,780) discloses a variable-length encoder and decoder using symbol/code-word re-association of coding table.

Renville H. McMann, Jr. (US patent # 3,571,503) discloses a method and its corresponding apparatus for simultaneously recording on film time displaced segments of an electrical signal.

Contact Information

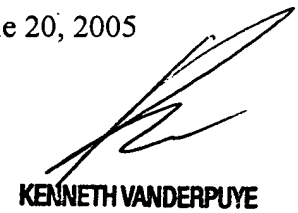
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (571) 272-3010. The examiner can normally be reached on Monday through Friday from 8:00 AM to 17:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Vanderpuye Kenneth N. can be reached on (571) 272-3078. The fax phone numbers for this group is (571) 273-3021.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

DXN

June 20, 2005



KENNETH VANDERPUYE
PRIMARY EXAMINER